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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Eran Steinberg

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EXAMINER

BAYAT, ALI

ART UNIT

PAPER NUMBER

2624

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/608,819	Applicant(s) STEINBERG, ERAN	
	Examiner Ali Bayat	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/20/04; 1/16/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1,5,8 and 12 rejected under 35 U.S.C. 101

Claims 8 are 12 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Regarding claims 8 and 12: the preamble states "one or more processor readable storage devices having processor readable code embodied thereon, said processor readable code for programming one or more processors to perform a method of compression of an image including a face" which as written is not statutory. A computer program/product needs to be encoded/embedded on a computer readable medium for a computer to carry out the steps of the program method (SEE MPEP 2106 and pages 52-53 of the Interim Guidelines). Further, in regard to claims 8 and 12, examiner suggest that these claims can become statutory by changing the preambles to " a method of compression of an image including a face, to use in a system comprising: one or more processor readable storage devises having processor readable code embodied thereon, said processor readable code for programming one or more processors to perform the following steps;" and plus adding the practical application, which explained below in more detail. Further more claims 1, 5,8 and 12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 1,5,8 and 12 recites the mere manipulation of data or

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an abstract idea, a practical application exists if the result of the claimed invention is “useful, concrete and tangible”

(With the emphasis on “result”)(Guidelines, section IV.C.2.b). A “useful” result is one that satisfies the utility requirement of section 101, a “concrete” result is one that is “repeatable” or “predictable”, and a “tangible” result is one that is “real”, or “real-world”, as opposed to “abstract” (Guidelines, section IV.C.2.b)). Claims 1,5,8 and 12 merely manipulates data without ever producing a useful, concrete and tangible result [claims 1,5,8 and 12] provides for a method of compression of an image including one or more faces, comprising: a) identifying a group of pixels that corresponds to a face, b) determining a first compression portion of the image including the face; c) determining a second compression portion of the image other than the face; d) automatically compressing the first portion with higher grade compression rate than the second portion to generate a compressed image including the face. There is no practical application, because the result of the claimed invention is not “ useful, concrete and tangible”].

In order to for the claimed product to produce a “useful, concrete and tangible” result, recitation of one or more of the following elements is suggested:

The manipulation of data that represents a physical object or activity transformed from outside the computer.

A physical transformations outside the computer, for example in the form of pre or post computer processing activity.

A direct recitation of a practical application;

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Applicant is also advised to provide a written explanation of how and why the claimed invention (either as currently recited or as amended) produces a useful, concrete and tangible result.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2,4-5, 7-8-9,11-12 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Kato (US 2004/0120399 A1).

In regard to claim 1, Kato provides for a method of compression (Para.38, Fig.2 note steps 105 and 106, corresponds to compression) of an image including one (Fig.2 step 104, Para.38, note face area) or more faces, comprising: (a) identifying a group of pixels that correspond to a face within a digitally-acquired image (Fig.2 step 104, note face area extraction, Para. 38 lines 4-9, note face area recognition processor, further note that face area extraction corresponds to digital image, which constructed or rendered with pixels, that belongs to face area); (b) determining a first compression portion of the image including the group of pixels (Para.39 lines 8-12, note that quantization coefficients has a narrower step widths in face are, which corresponds to

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compression of first portion of image); (c) determining a second compression portion of the image other than the group of pixels (Para.39 lines 8-12, note that “in other area, quantization coefficients with wide quantization step widths are used”, which corresponds to second portion of the image with different compression level) ; and (d) automatically compressing the first compression portion with higher-grade compression rate (Para.70, Fig.13, note that quantization coefficients other than the Lowest frequency component (LL2), for the face area is lower than those of the quantization coefficients for non-face area) than the second compression portion to generate a compressed image including the face (Para.70, Fig.13, note that quantization coefficients other than the Lowest frequency component (LL2), for the non-face area is greater than those of the quantization coefficients for face area, further note that image with lower quantization level or step corresponds to higher-grade of wavelet compression or better quality) and vice versa the image with higher level or step of the quantization coefficients corresponds to lower-grade of wavelet compression or degraded image).

With regard to claim 2, Kato provides for a method of compression of an image, further comprising implementing said compression rate as adjustable image resolution (Para. 39 lines 5-7, note “by selectively using a plurality of quantization tables based on the result of recognition by the face-area determined as a face area” note that quantizing the face area with different quantization tables or steps corresponds to adjustable image resolution, also note Fig.13).

In regard to claim 4, Kato provides for a method of compression of an image, said

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higher grade compression rate comprising a function of one or more parameters including the relative size of the face (Fig.10, Para.63, note the size and the shape of the face area represented by the face area information correspond with the ellipse of the determination template 72), location of the face, exposure of the face, or total of faces detected in the image (Para.83, note detection of plurality of face areas), or combinations thereof.

With regard to claim 5, see the rejection of claim 1. It recites similar limitation as claim 5. Except for (d) automatically providing an option (Para.39 lines 5-8, note " the quantization processing is performed by selectively using a plurality of quantization tables based on the result of recognition by the face-area determined as a face area', note selectively corresponds to an option for using the quantization tables for compressing the face-area with any one of the quantization tables) for compressing the first compression portion with higher-grade compression rate than the second compression portion to generate a compressed image including the face (Para.39 and for more detail see explanation provided in rejected claim 1). Hence it is similarly analyzed and rejected.

As to claim 7, see the rejection of claim. It recites similar limitations as claim 7. Hence it is similarly analyzed and rejected.

In regard to claim 8, see the rejection of claim 1. It recites similar limitations as claim 8. Except for One or more processor readable storage devices (Fig.6 element 44, Para.47 line 1) having processor readable code embodied thereon (Para.47 lines 2-3) said processor readable code for programming one or more processors (Para.47 lines

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1-6). Hence it is similarly analyzed and rejected.

With regard to claim 9, see the rejection of claim 2. It recites similar limitations as claim 9. Hence it is similarly analyzed and rejected.

As to claim 11, see the rejection of claim 4. It recites similar limitations as claim 11. Hence it is similarly analyzed and rejected.

In regard to claim 12, see the rejection of claim 5. It recites similar limitations as claim 12. except for one or more processor readable storage devices (Fig.6 element 44, Para.47 line 1) having processor readable code embodied thereon (Para.47 lines 2-3) said processor readable code for programming one or more processors (Para.47 lines 1-6). Hence it is similarly analyzed and rejected.

With regard to claim 14, see the rejection of claim 4. It recites similar limitations as claim 14. Hence it is similarly analyzed and rejected.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (US 2004/0120399 A1) in view of Jacquin et al. (U.S. 5,764,803).

In regard to claims 3 and 10, Kato provides for a method of compression of an image, said higher grade compression rate (Para.39, lines 8-12, note the quantization

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coefficients are used for face area has narrow quantization step widths, it means less compression, therefore results better image quality, which corresponds to higher grade compression rate) varying between a plurality of groups of pixels (Para.39 lines 5-8, note " the quantization processing is performed by selectively using a plurality of quantization tables based on the result of recognition by the face-area recognition processor 116.". also para.83 lines 3-6, note " detection of a plurality of face areas, and quantization control on a plurality of areas based on the result of recognition may be performed."). Kato does not teach a plurality of faces. Jacquin teaches the detection of plurality of faces (col.3 lines 2-4, note detection and tracking of objects of interest, such as human faces, also in col.3 lines 16-22, note that objects of interest or human faces are coded with the high quality coder or quantized finely and the other part of the image is encoded with the low quality coder or quantized coarsely). The prior art of Kato and Jacquin are combinable, because they are same field of endeavor (region-based compression). One in the art would have been motivated to modify Kato according to Jacquin to "the coding of video signals for efficient transmission and/ or storage" (Jacquin , col.1 line 14-15) and "the quality of the coding of the face will e improved relative to the quality of the coding of less critical portions of the image" (Jacquin, col.2 lines 52-54) and therefore, it would have been obvious to one of the ordinary skill in the art to modify Kato according to Jacquin.

Claims 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (US 2004/0120399 A1) in view of Savakis et al. (US 2003/0059121 A1).

With regard to claims 6 and 13, Kato provides for a method of providing an option for compression of an image, wherein said option is variable (Para.39 lines 5-8, " the quantization processing is performed by selectively using a plurality of quantization tables based on the result of recognition by the face-area recognition processor 116 "(note selectively corresponds to an option for using the quantization tables for compressing the face-area with any one of the quantization tables, further (see Para.39 lines 8-12, the quantization coefficients are used for face area has narrow quantization step widths ,which corresponds to higher grade compression rate), based on a subjective user decision. Kato does teaches " a subjective user decision'. Savakis teaches " a subjective user decision' (Para.130, lines 1-7, note, " User can specify a different quantizer step size for each coefficient. This allows the user to control the resulting distortion due to quantization in each coefficient. The quantizer step sizes may be designed based on the relative perceptual importance of the various DCT coefficients or according to other criteria depending of the application". Further in lines 10-13 or last 4 lines of Para. 130 note " the Q-table is the main component in the JPEG system for controlling the compressed file size and the resulting decompressed image quality". Note the above-cited portions correspond to a subjective user decision.

The prior art of Kato and Savakis are combinable, because they are same field of endeavor (controlling the compression of the image). One in the art would have been motivated to modify Kato according to Savakis to " the amount of compression for an image in the group is controlled using a quality factor whose value is related to image emphasis/appeal of the image that is compressed" (Savakis, Para.5 lines 3-6), and

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"compression is controlled based on visual quality" (Savakis, Para.5 lines 6-7), and "compression is controlled based on output file size" (Savakis, Para.5 line 8) and further therefore, "This allows the user to control the resulting distortion due to quantization in each coefficient. The quantizer step sizes may be designed based on the relative perceptual importance of the various DCT coefficients or according to other criteria depending of the application" (Para.130 lines 1-7). It would have been obvious to one of the ordinary skill in the art to modify Kato according to Savakis.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. patent No. 6,937,773 to Nozava et al., teaches method/apparatus for encoding an input image by applying different quantization lever to different regions of image.

U.S. patent No. to Eleftheriadis et al. teaches Facial feature location detection.

U.S. patent No. 5,150,432 to Ueno et al. teach improving quality of a specific region.

Pub. No: US 2003/0123751 to Krishanmurthy et al. teache identifying and using region (s) of interest to provide functionalities such as zooming, composition.

Pub. No: US 2006/0018517. Teaches detecting human eyes and face.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Bayat whose telephone number is 571-272-7444.

The examiner can normally be reached on M-F 9:00 AM-5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ali Bayat

A handwritten signature in black ink, appearing to read 'Ali Bayat', with a stylized flourish at the end.

Patent Examiner

Division 2624

11/10/06